



Expectations are shifting

How measurement solutions can help overcome chemical industry challenges

Expect more from your measurement

A world of expectations

Chemical businesses like yours know the value of hard work and persistence. For years, your industry has faced an array of challenges with dedication and conviction. You expect that of yourself. You expect that of your people. Now, the industry expects even more from you.

Environmental and safety regulations are tightening, yet you must grow revenue. Despite aging technology, you are expected to be more productive. Some of your most experienced workers are facing retirement, yet your operations are expected to continue unaffected. You are expected to overcome these industry changes, while still reaching increasing performance targets.

You have high expectations of yourself and your business. In the face of these new challenges, you need to expect more from your measurement solutions.

In this eBook, explore the four critical challenges facing chemical businesses today and learn several best practices in measurement and analytics that can most effectively help you overcome them.



Businesses everywhere are working with more gaps and challenges

Many operators are looking for creative ways to maintain and grow in a changing world. There's a new expectation. Businesses are ambitiously trying to meet rising performance goals, while handling today's growing gaps and challenges.

These are the gaps and challenges many businesses are working with today.

ABB experts say... Safety is key.

"In today's chemical plant, safety is key. That is why having the ability to make fast, accurate, and reliable measurements on any process is critical. It allows us to maintain control, and ensure safety. This not only applies to measurement of the process itself, but also to immediate detection of hazardous air quality, and on-going monitoring of environmental emissions. At ABB, our broad portfolio of industrial measurement products enables our customers to achieve these measurements, every single day."

**Dr. Michael Kester, ABB
Industry Manager,
Downstream & Chemicals**



SAFE, SECURE OPERATIONS **A dangerous business. Tightening regulations.**

Safety is critical, especially in an environment as dangerous as a chemical plant. Businesses know that the longer engineers are exposed to the most dangerous parts of the plant, the greater the risk.

However, businesses rely more and more on accurate and reliable measurement and analytics to ensure safety in the chemical industry, which is twice as dangerous as refineries and petrochemical facilities.

It's clear that businesses need better methods to meet these new expectations.

Even for businesses that have rapidly embraced it, there are safety concerns about how secure that technology is – and how to best protect it against threats.

Meeting tightening environmental regulations is also a growing objective. Chemical plant engineers are looking for more measurement and analytics to help reduce power consumption and create energy efficiencies through greener technologies.

Businesses need to ensure that their equipment and processes protect their people, the environment, product and revenue all at the same time.



THE SKILLS GAP

Retiring workers. Shrinking pool of employees.

“In the coming decade, 50% of the oil and gas workforce is expected to retire” – and they can’t be easily replaced. For the chemical industry, retiring employees often means retiring knowledge, as there are fewer employees entering the field.

The result of this situation is a skills gap and its impact is extensive. Dependence on technological experience and expertise of measurement and analytics is on the rise in the chemical industry.

While the workforce is shrinking, businesses have to be more efficient than ever in order to keep up. When seconds count in the measurement process, businesses need faster measurement and more control, even without the manpower they used to have. When an instrument is failing and gives inaccurate readings, measurement and analytics suffer.

Even when the manpower does increase by hiring entry-level employees, businesses must understand that these employees are much more tech savvy and expect to work in an environment that reflects the latest advancements.



THE TECHNOLOGY GAP

Aging, less user-friendly equipment. Time-consuming processes.

Businesses are eager to harness the power of new technologies. More technological innovation allows for greater integration of various instruments, calibration and maintenance activities within control systems.

In addition, the use of remote services, especially in the chemical industry, can minimize exposure to hazardous environments and ensure longevity in terms of safety.

Adapting to digital transformation can be a challenge, especially when change means investing time to train employees on unfamiliar equipment and processes.

There is a technology gap – and filling this gap can allow businesses to be more productive and profitable.



THE PROFITABILITY CHALLENGE

Rising production goals. Fewer resources.

Determined as ever, businesses continue to raise production goals despite losing vital portions of their workforce. Essentially, they are trying to do a lot more with a lot less. This has created a profitability challenge.

In this demanding new landscape, businesses still have to maintain speed, quality and accuracy. This is challenging when, for example, forced shut-downs pose major concerns for chemical customers, as they strive to keep productivity levels as high as possible.

However, with aging equipment, this can add to the challenge. Equipment that isn’t sensitive or intuitive enough can take up valuable time – and it can even result in a loss of product. Chemical companies struggle with the delays caused by waiting for laboratory test results. These lab tests often take too long, do not represent real-time measurement and are non-representative since only a few samples a day can be taken.

Overall, the profitability challenge has led to a growing need to make operations as efficient as possible, in order to reach the goals businesses know they can achieve.



ABB experts say...

Information enables automation.

“I have to go back to how important reliability of measurement really is. Reliability of the digital information that sensors create, allows us to properly automate chemical processes. Sensors, analyzers, transmitters and instruments can all bring customers this knowledge. An automation strategy that relies on this digital information can then be created, allowing our customers to look forward, with better knowledge and control of their process.”

Dr. Paul Chabot,
ABB Canada Sales and
Marketing Manager

Best practices for filling the gaps and addressing the challenges.

The resourceful attitude of chemical businesses has never been stronger. However, the gaps and challenges they are facing are significant. Fortunately, there are plenty of solutions available for getting ahead of these issues, so your operation can run in a way that's efficient, safe and profitable.

Consider these four best practices in order to close the gaps and overcome the challenges.

01 Choose products and solutions that meet the highest safety standards, so you can reduce exposure to dangerous processes.

The latest advancements can potentially help you keep both the environment and your employees safe. Make sure that any equipment and technology you purchase meets the highest safety standards. For your employees, this means equipment and technology, such as a common HMI interface and auto-configuration. For the environment and your business, this means ensuring monitors are effective at detecting problems before there is a risk to the environment – and to profit. Long term stability of products means that less time is needed to replace or maintain them.

02 Leverage automated solutions to eliminate manual processes and gain more insight.

Through automation, it's easier to replicate recurring tasks in a way that's consistent and accurate. This allows you to optimize operations by cutting down on manual processes that take up time and resources, such as maintenance tasks. This is also beneficial because chemical companies more and more want process switching from calibrations to be done automatically. It even allows you to reduce analyzer failures that are the result of human interaction. This frees up your employees to focus on more valuable tasks that require their expertise. Essentially, you can do more with fewer employees, helping you close the skills gap.

03 Invest in digital technology that delivers advanced insights and improves safety and accuracy.

Digital technology can help your operation run much smoother and safer. Implementing more digital technology allows your business to get low-cost access to data that can support your effort to optimize processes. It can also bring value by helping you respond to issues faster and with more accurate information. An example of this is the use of an absorption spectrometer, which aids in measuring lower and faster even in the harshest of conditions. Laser-level measurement is also a readily important technology that has a lower deterioration rate, better accuracy and is less complicated to install than traditional measurement tools. Digital advancements can help businesses run in a way that's more safe, profitable and efficient.

04 Choose a partner that has your products and services covered from end-to-end, to increase your uptime and lower total cost of ownership (TCO).

A partner that is a domain expert, provides strong technical product management and covers your operation from end-to-end can help you create integrated solutions for your business. By having a full solution from one partner, that partner can better help you solve challenges that may come up, rather than just a small part of a problem you're experiencing. With a fully integrated solution, all of your products are much more likely to work well together, helping you achieve greater uptime, lower TCO and improved profitability.

Expect more from your measurement



All of these challenges can be met proactively with smart technology and solutions in place. The chemical industry is made up of a culture of determination, with a workforce that meets challenges head on. Now, you can support your operations and people in new ways, to keep them moving forward. By leveraging advancements in technology, you can ensure that your operation runs at its best while keeping your people and environment protected at the same time.

ABB Measurement & Analytics

For more product information, visit:
www.abb.com/measurement